

7.5b Applications of Integrals

Fluid pressure

Why are dams thicker at the bottom?

Does the fluid pressure at any point on a dam depend on the amount of water held back by the dam?

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What is the total force on the front side of an aquarium if the side is 3ft wide by 2ft tall?

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The Puritan Distilling Company had a 90 ft high, 90 ft diameter cylindrical metal tank filled with molasses which weighs 100 lb/ft^3 . In 1919 the tank exploded due to fluid pressure. What was the total fluid force on the tank wall?

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A steel plate in the shape of a semicircle is submerged vertically in sea water. Find the fluid force on the plate if it has a 4 ft diameter.

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